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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,991	03/07/2005	Penne J. Hout	62531A	7616
109 7590 02/22/2007 THE DOW CHEMICAL COMPANY INTELLECTUAL PROPERTY SECTION, P. O. BOX 1967 MIDLAND, MI 48641-1967			EXAMINER CHANG, VICTOR S	
			ART UNIT 1771	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/22/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/526,991

Applicant(s)

HOUT ET AL.

Examiner

Victor S. Chang

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Introduction***

1. Applicants' remarks filed on 1/16/07 have been entered. Claims 1-13 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

3. Claims 14-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/16/2007. However, since the rejection of the article claims are maintained, as set forth below, the restriction requirement is also maintained, and made Final.

### ***Rejections Based on Prior Art***

4. Claims 1, 2 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. [US 6248802].

Singh's invention relates to a polyisocyanurate foam [col. 2, line 19-45; col. 6, lines 14-41; col. 5, lines 44-45]. The foams are known to have structural, thermal insulation and fire retardation properties for use as a building material. The reaction system may comprise one or more auxiliary agents or additives as needed for one or more particular purposes, such as flame retardants including tris(2-chloropropyl)-phosphate), tetrabromophthalate esters, and glass fibers,

Art Unit: 1771

etc. The amount of auxiliary materials or additives is generally between about 0.1 to about 20 wt% based on 100 wt% of the total foam formulation. Suitable blowing agents include hydrocarbon such as isopentane, n-pentane, cyclopentane and mixtures thereof.

For claims 1, 2 and 7-12, Singh lacks a teaching that the building material has an exposed metal facing. However, since it is common and well known that a building panel of a polyisocyanurate foam typically comprises aluminum facer as an outer protective layer and also provides an improved thermal insulation property (the Official notice in the prior Office action is now taken as admitted prior art), it would have been obvious to one skilled in building panel to add an aluminum facer to Singh's building material, motivated by the desire to obtain a beneficial product improvement. Regarding the residual amount of halogenated blowing agent, Singh's hydrocarbon blowing agents, such as isopentane, n-pentane, etc., do not result in residual halogenated blowing agent. Regarding the distribution of the fire-retarding fibers (glass fibers), since Singh teaches that additives are mixed in the reaction system prior to the formation of the polyisocyanurate foam, a uniform distribution of the glass fiber in the resultant foam is deemed to be an inherent feature of the reaction mixture, because a uniform mixture is inherently required for the reactants to be reacted properly. Finally, regarding the Burn Test, since Singh teaches all the composition as claimed, a suitable Burn Test result is reasonably considered to be an obvious routine optimization to one skilled in the art of flame retardant polyisocyanurate foam, motivated by the desire to obtain a required flame retardancy for building use.

For claim 13, since Singh teaches generally the same composition for the same use as the instant invention, a suitable foam thickness is also reasonably considered to be a routine

Art Unit: 1771

optimization to one of ordinary skill in the art, motivated by the desire to obtain an adequate thermal insulation property.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. [US 6248802] either evidenced by, or in view of, Swab [US 5102919].

The teachings of Singh are again relied upon as set forth above.

For claims 3-6, Singh's teaching of the tetrabromophthalate esters reads on the claimed tetrabromophthalate diols, as evidenced by Swab. More particularly, Swab's invention relates to polyisocyanurate foam, and teaches that suitable aromatic polyesters includes commercially available tetrabromophthalate diols. It appears that tetrabromophthalate diols is either a species of tetrabromophthalate esters genus family, or they are equivalent terms.

Alternately, since Swab teaches that tetrabromophthalate diols is a suitable aromatic esters for forming polyisocyanurate foam, it would have been an obvious selection to one of ordinary skill in the art of polyisocyanurate to incorporate it in the reaction mixture, because the selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

### ***Response to Argument***

6. Applicants argue at Remarks pages 2-3 that Singh does not suggest the combination of elements in claim 1 for achieving the stringent flame retardant properties, and Swab only acknowledges an objective of achieving a less stringent flame retardancy. However, since the prior art clearly suggested the benefits of a flame retardant building panel, and nowhere is there a teaching by the prior art that product is limited for less stringent flame retardancy, it is unseen

Art Unit: 1771

how one of ordinary of skill in the art of building would be prevented from maximizing the flame retardancy of the prior art for the same use as the instant invention.

Applicants argue at page 3 that Singh does not teach the specific combination or concentration limitations of claim 1, especially Singh fails to mention a metal facing sheet, and Office has made an improper hindsight reasoning. However, since applicants fail to traverse the Official notice that it is common and well known that a building panel of a polyisocyanurate foam typically comprises aluminum facer as an outer protective layer and also provides an improved thermal insulation property, the examiner maintains that the combined teachings of prior art render the instantly claimed structure and composition obvious. As to the specific combination or concentration limitations of flame retardant, since the prior art renders the composition of flame retardant obvious, and suggests the benefits of flame retardancy of building panel, a workable degree of flame retardancy is clearly deemed to be an obvious routine optimization for an end product for the same use.

Applicants point to the specification page 1 and argue at pages 3-4 that one of ordinary skill in the art at the time of filing obviates the proposed motivation by Office, because there would not be a reasonable likelihood of success without using mostly CFC and/or HCFC in the blowing agent. However, since the specification of present application is not relied upon prior art. Applicants' argument is misplaced. If applicants wish to further the discussion over the flame retardancy effect of halogenated blowing agents, the examiner suggests that a declaration by a disinterested third party is required.

Applicants argue at page 4 that Singh gives only general guidance and fails to provide guidance as to what to optimize and in what combination to optimize components, and Office

Art Unit: 1771

reasoning amounts to 'obvious to try'. However, since the combined teachings of prior art render the general structure and composition of instant invention obvious, and the resultant product is for the same use (building panel), including a clear guidance by Singh regarding the use of the claimed flame retardant, a workable flame retardancy is deemed to be an obvious routine optimization to one skilled in the art of building panel, because the utility of the building panel dictates that there would be similar flame retardancy for the same use. Applicants' argument ignores the clear reasoning provided by the Office.

Applicants again point to the specification page 1 and argue at page 4 that one of ordinary skill in the art would not expect success in achieving the flame retardant properties with blowing agent containing less than 50 wt% CFC and HCFC. However, since the specification of present application is not a relied upon prior art, applicants' argument is clearly misplaced.

Applicants argue at page 5 that the examiner's Official notice is insufficient to supplement the general teaching in Singh in order to achieve the specific of components and concentrations that, in combination with one another, make up the whole of Applicant's present invention. However, applicants fail to traverse and point out any error in the Official notice. Further, since the combined teachings of prior art renders the structure and composition of the instant invention obvious, and clear guidance has been provided by Singh regarding the use of flame retardant for property improvement, the rejection is 35 U.S.C. 103(a) is proper, and applicants are reminded that the basis of rejection is not 102 based.

Applicants argue at page 6 that expandable fiber mat in claim 12 cannot be incorporated into foam by the suggested process of mixing. However, claim 12 merely recites that the fiber is obtained from an expandable fiber mat, nowhere is there a requirement that the integrity of the

Art Unit: 1771

fiber mat must be maintained during mixing. Further, applicants fail to provide any evidence or reasoning that why the proposed process would fail. Finally, applicants are reminded that product-by-process limitation must be shown on the record to produce a patentably distinct article, otherwise the formed articles are rendered *prima facie* obvious.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

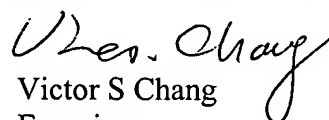
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1771

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Victor S Chang  
Examiner  
Art Unit 1771

2/16/2007